BACK INJURIES AMONG NURSING STAFF

AN EXPLORATORY STUDY

Julie Elwyn Hale

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Contents

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Abstract

The aim of this research was to explore back injured nurses' perceptions of their own pain relative to that of their patients, the extent to which nurses self-diagnose, self-treat and seek on-the-job advice and treatment as well as the effect these two factors have upon the amount of taken time off work. A sample of 15 female back injured registered nurses between the ages of 23 and 50 years and employed within the Canterbury area were interviewed. A person-to-person semi-structured interview was conducted to obtain data from two conditions: initial and subsequent. The initial condition refered to the first or predisposing incident or injury which may or may not have been identified prior to the occurrence of the second or subsequent injury. Correlations and frequency calculations were carried out. Results suggest that nurses do not cease work immediately following a back injury but continue to work out of a sense of obligation to both patients and other staff members. Nurses who reported their patients to be in more pain than themselves stayed at work longer before ceasing work and seeking treatment. Nurses tended to self-treat at some time following their injuries, but did not generally seek on-the-job advice or treatment. The extent to which these factors together affect the total amount of time taken off work are discussed. Recommendations in light of these findings include immediate cessation of work, rotation of staff, attention to attitude amongst staff about back injuries in general, introduction of ancillary staff to assist with lifting, and the reinforcement of reporting incidents of back injury.

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Chapter One

Introduction

Back pain is something which is not new to homosapiens nor is it unique to them. Ramazzini discussed lumbago among workers as far back as 1690 and the ancient Egyptians diagnosed sciatica some 5000 years ago. Human beings are not the only animals to experience pain backpain; quadrupeds apparently suffer from backpain also (Snook, 1989).

With varying prevalence among the human population, backpain is a worldwide phenomenon. Interestingly though, some non-western nations, such as Jamaica and countries in Asia record a lower frequency of backpain than people in the western world (Grimes, 1987).

Numerous attempts have been made to reduce the incidence and severity of back injuries and to improve the treatment and prognosis of back pain sufferers. Never-the-less, back injuries continue to occur and back pain still costs governments, insurance companies and employers, not to mention back pain sufferers, thousands of dollars per year.

It is well documented that there is a high number of back injuries amongst nurses leading to time taken off work. Given that many studies have been devoted to minimising the rate of back injuries, it is surprising that work time is still lost within the nursing profession.

Amongst the nursing fraternity, many investigators have searched for the factors associated with back injuries. Gender, age, physical fitness, family and medical history, tenure, rank, seniority and department are all factors which at some time or another have been identified as being linked to the incidence of back pain (Andersson & Gunnar, 1981; Buckle, 1987; McAbee,

1988 &1989; Cato et al., 1989; Grimes, 1989; Gilad, & Kirschenbaum, 1988; Green, 1989; Harber et al., 1981; Owen & Damron, 1987).

The current research investigated back injuries within the Canterbury area. It was designed to explore briefly when and where these injuries occur, and more particularly, what actions nurses take to treat these injuries and finally what factors are involved in taking time off work for these injuries.

Rationale

The literature suggests that the lifting of patients in, around and upon beds within public and private hospitals comprises the most common task where back injuries occur. In addition, the literature in general concludes that the causes of back injuries may include a combination of job design and environmental factors. Job redesign and ergonomic solutions have been suggested as ways in which the back injury rate could be reduced. However, despite all these measures nurses continue to sustain back injuries and continue to have time off work for these injuries. It is apparent therefore, that some other dynamics may contribute to nurses taking time off work.

Most people are aware that immediate attention and treatment to any injury is vital to the healing processes and the minimisation of further damage to the injured site. Nurses, it is assumed, would be more knowledgeable than the average person about the importance of immediate treatment and rest. However, records of back injuries amongst nurses within the Canterbury Area Health Board show that nurses frequently delay ceasing work following an injury sustained at work. These records also demonstrate that the longer the delay between actual injury and cessation of work, the greater the total amount of time off work. It was apparent therefore, that some other factors may be involved in back injuries which perhaps contribute to the delay in taking time off work.

There is very little research into the psychological processes associated with people who are in pain nursing other people who are in pain. For example, nurses may give their own injury low priority relative to their patients' injuries or discomfort or, fail to acknowledge it at all because of their patients' pain or need for attention. Secondly, nurses may not always

seek or receive adequate or appropriate diagnosis or treatment. This could be because of a number of reasons.

With the dissolution of the health office within Princess Margaret and Christchurch Public Hospitals, staff do not appear to have easy access to formal medical attention specifically for them. Working amongst medical personnel may make people reluctant to seek treatment outside the institution where they work and for which they have to pay. Instead, they may seek the advice of a colleague with whom they work. Professionals working within an area have a tendency to seek casual attention from their peers or superiors, for example in the change room between shifts, in the coffee room or in the staff office (Coyle,1990). Under these circumstances, the injured person may not get adequate or appropriate treatment at all due to the informal nature of the consultation. The doctor or colleague may casually suggest ("prescribe") some type of interim treatment or drug which could be inadequate or inappropriate on the grounds of insufficient information of the injury. The injured staff member may consider that they have received attention and continue to work when in fact this attention may have been inadequate.

Receiving medical attention requires that the nurse leave the place of work on sick leave or in their own time and sometimes take several hours to visit a practitioner outside the hospital. If a nurse goes off duty because of illness there is seldom a replacement person available - especially at short notice. This may result in the nurses perception that the patient may "miss out" or have to wait longer for attention due to lack of staff to attend to them and/or that colleagues will have extra work to do.

When a nurse is injured at work and is faced with a decision about

leaving work to receive attention, it is likely their decision regarding their injury or condition will be influenced by the state of the ward or unit and their patients at the time. Consequently, their decision is perhaps based upon external factors rather than internal factors.

Objectives

Thus, there were three main objectives of this study. Firstly to examine, by interview, the perceptions of injured nurses with regard to their own health relative to that of their patients. Secondly, to investigate their eagerness to seek medical attention both within their immediate work environment and outside it, and how available this treatment is to them. Thirdly, to explore nurses' attitudes to lifting, back injuries, treatment and taking time off work for their own illness.

Outline

There are many studies of back injuries both in general occupations and specifically among nurses. Chapter two provides a brief summary of some of these studies and their results, before presenting three formal hypotheses. Chapter three describes the method used to gather this information and chapter four presents detailed results from the respondents which are in turn, discussed in chapter five. Finally, reference and appendices are presented.

Chapter Two

Review of the Literature

The immense volume of literature about back injuries reflects the magnitude and extent of the problem. A significant amount deals specifically with back injured nurses indicative of the enormity of the problem within the nursing profession. This chapter will review the literature pertaining to occupational back injuries research particularly within the nursing profession. It is by no means exhaustive but is representative of the existing literature in the area.

Firstly, some of the literature regarding the incidence and prevalence of back injuries will be presented, followed by some of the epidemiological factors. Then, a number of associated findings will be referred to and finally some of the prevention strategies which have been proposed will be reviewed.

Incidence and Prevalence

Stubbs (1983) estimates that almost three quarters of a million working days are lost per annum in the United Kingdom due to back pain (Khalil et al., 1987; Marchette, 1985). In Sweden, National Health Insurance data indicate that between 9% and 19.5% of all work days lost because of illness are due to back problems. These Swedish surveys show that back injuries are responsible for more days absent from work than any other disease group. Between 50% and 80% of all Swedes suffer from back pain at some time in their life, and back pain was the diagnosis in all new disabilities or

early retirement pensions for the year 1980 (Andersson & Gunnar, 1981).

Owen and Damron (1984) assert that back injuries are a significant problem in all types of industry accounting for the greatest amount of compensation paid in the United States. Nursing in particular has a high rate, largely, it appears, because of the lifting and transferring of patients. In one American state, 40% of compensated hospital injuries between 1972 and 1976 were due to injury to the lower back (Owen & Damron, 1984).

Snook (1989) concluded from reviewing some of the literature that there was an 80% lifetime prevalence of lower back pain for the general population (Hull, 1976; Horal, 1976 ; Nachemson, 1976 cited in Snook, 1989). Of these, 10 million between the ages of 18 to 64 were employed and comprised 11% of the total number of back injured or back pain sufferers.

Some occupations, as one might expect have a greater prevalence of back pain than others. Snook (1989), in reviewing the literature, concludes that the occupations in the United States which are most at risk are laborers, garbage collectors, warehouseworkers mechanics and nursing aides. Interestingly, nursing appears to compare more closely in terms of back injury rates with manual occupations than with other service or medical occupations. Magora (1970) found the highest incidence of back injuries was amongst workers in heavy industry and nurses. The British Royal College of Nursing Working Party reported that the incidence of back injuries amongst nurses and industrial manual workers was similar.

Few studies have compared nursing with other occupations in terms of back injury prevalence or incidence, yet a study in a large general hospital in Israel found occupational category to be the single most important determinant of injury rate (Magora, 1970; Kalil et al., 1987). Two other

studies which compared nurses with other hospital workers showed that nurses sustained more lifting injuries and lost more working days due to back injuries than other workers (Prezant et al., 1987; Buckle, 1987). A multi-occupational survey, also carried out in Israel, reported that nurses ranked second to heavy industrial workers in terms of back pain prevalence (Kalil et al., 1987).

Buckle (1987), in reviewing a number of studies, states that there is wide agreement that nurses show a relatively high prevalence of occupational back injuries. Jenson (1987), in a comparison between nursing and 21 other occupations found that back injuries amongst nurses are more serious than those of most other occupational groups.

In 1986, an extensive longitudinal investigation was conducted by the Ergonomic Research Unit at the University of Surrey, United Kingdom. It was found that the annual prevalence of back pain (i.e. total number at any one time) among 3,912 National Health Service nurses was 431 per 1,000 at risk. The annual incidence (i.e. number of new injuries) was recorded as 77 per 1,000 at risk. Among the many conclusions they reached both from their own studies and those of others was that nurses show a relatively higher prevalence of back pain compared to a number of other occupations.

In the United States, where the health care industry employs more than four million workers, the annual reporting rate of hospital related illness and injuries for compensation is about 10 per 100 workers. Although nurses represent only 33% of the total hospital workforce, they account for 60% of the reported incidence of injuries. Nursing in general records the highest worker injury rate of all hospital workers, with the greatest number of disabling incidents to nurses reported as being lifting tasks (Prezant et al.,

1987; Buckle, 1987).

New Zealand Data

New Zealand Accident Compensation Corporation statistics for 1989, show that the New Zealand occupations most at risk of back injuries are food manufacturers (with 1814 compensation claims), agricultural and livestock workers (with 1669 compensation claims), and medical, dental and veterinarians (with 1566 compensation claims). The last category comprises mostly nurses (Accident Compensation Corporation, 1989).

In 1989, the total number of injuries reported to the New Zealand Accident Compensation Corporation was 75,789. Of these, 21,166 were back or neck injuries comprising 13.5 % of total injuries for which claims were made. When examining claims for back injuries according to industry, public and private hospitals record the highest number with 1506, comprising 8 % of all claims in 1989. The Canterbury Area Health Board recorded 172 work related back injuries for the year from 15 March 1990 to 15 March 1991 for which compensation was paid. Of these, 95 (55.2%) were nursing staff back injuries. A break down by hospital showed that Burwood Hospital recorded the highest with 23 back injuries to nurses, Christchurch Public Hospital recorded 21 back injuries to nurses and Princess Margaret Hospital and Sunnyside Hospital respectively recorded 12 back injuries to nurses.

The only South Island Spinal Injuries unit is situated at Burwood hospital. Although exact figures were not available, by far the majority of injuries reported from Burwood Hospital occurred in the Spinal Injuries Unit (Deavoll, 1991). A study conducted by a nursing staff member at the

Spinal Injuries Unit, found that 52% of the nursing staff had suffered occupational back pain while working in the unit (Green, 1989).

It is evident from the literature that occupational back injuries occur frequently amongst a small number of occupational groups. Nursing in particular constitutes a large proportion of these injuries and the problem appears to be evident in New Zealand as well as other western countries.

Epidemiological Factors

Authors have investigated a multitude of factors associated with occupational back injuries. The extensive list includes environmental design and conditions, personal biographical factors, administrative procedures and prevailing attitudes and approaches to work (Andersson & Gunnar, 1981; Buckle, 1987; Cato et al., 1989; Mandel, 1987; Owen & Damron, 1987; Snook, 1989; Stubbs, 1983; Stubbs, et al., 1986; Stubbs, 1987).

A number of epidemiological factors associated with back injuries have been evaluated, with age and gender found to be the primary demographic factors accounting for back injuries. Other variables examined in the literature include family and medical history, smoking and health in general, physical fitness and exercise, vulnerability to stress, anthropometry, length of tenure, length of time in a given unit or department, and seniority or rank. To some extent, findings are varied and contradictory. The next section of this review will address some of these more frequently investigated epidemiological factors.

Age

Magora (1970), in a study of low back pain across occupation found a tendency for low back pain to occur earlier in nurses and heavy industry

workers than in other occupations in the survey. The incidence of low back pain in nursing and workers in heavy industry in the age groups 21 to 30 and 31 to 40 was much higher than the control group, particularly the postal office clerks. Magora (1970) concludes by suggesting that earlier low back pain may be related to hard physical work.

According to Andersson & Gunnar (1981), low back pain usually begins early in life with the maximal frequency of symptoms occurring between the ages of 35 and 55 years. One study reported that all adults, particularly those between 30 and 50 years of age, were affected by back injuries while another found the highest prevalence to be between the ages of 40 and 60 years (Gilad & Kirschenbaum, 1988).

McAbee (1988), in reviewing the literature, suggests that the 20 to 40 age group is the population most at risk. Low back pain related to heavy physical work was found to be more predominant under the age of 30 in a study of 880 nurses by Videman (1984). A smaller study of 55 back injured nurse aides in a geriatric hospital found the age range to be from 16 to 41.2 years (Dehlin, 1977).

Cato et al., (1989), found that the mean age of an injured nurse group was 36 years compared to 34 years in the non-injured group. The difference was not significant, however. Compared with the population at large, young nurses were found to have a slightly higher incidence of back injuries and backpain than the general population of the same age (Owen, et al., 1989; Hall,1983).

In summary, overall no one age group appears to be more at risk. Some studies have found specific age groups to be at a greater risk than others and some studies find other age groups to be at risk.

Gender

According to the literature generally, both males and females are affected with backpain. Snook (1989), in reviewing the literature concluded that the largest incidence of back injuries occurred in males between the ages of 20 and 24 while for females it was between the ages of 24 and 34. There was a tendency for younger workers to have less severe back disorders (Snook, 1989). Magora (1970) found that the proportion of males and females with low back pain was equal, and Andersson & Gunnar (1981) claim that gender is unimportant with respect to back symptoms. Most studies however, according to an extensive review by Snook (1989) suggest that females seem to be at a greater risk of experiencing backpain both earlier and more frequently than their male counterparts.

When comparing back injured males and females in industry, Brown (1975, cited in McAbee, 1989) found the average age for males to be 38 years while for females it was 35 years. Where studies comprise a higher percentage of nurses, the average age of back injury tends to be younger, apparently due to the higher proportion of females. According to Stubbs (1986), more recent studies suggest that female groups other than nursing have high rates of backpain also.

Overall, therefore, it appears that age of back injury occurrence is affected by gender and occupation. Back injuries tend to occur earlier in nurses and workers heavy industry. Males most frequently affected are between the ages of 20 to 24 while females at greater risk are between 24 and 34 years of age.

Physical fitness, health family and medical history

Owen & Damron (1984) indicated that among the back injured there was less muscle flexibility and that those who exercised more frequently experienced fewer low back injuries. McAbee (1988) suggested that both muscle strength and physical fitness have some relationship to low back pain. In his review of studies, Snook (1989) concluded that physical fitness and conditioning are preventative of back disorders. However, in contrast Cato et al., (1989), found that there was no statistically significant difference between injured and non-injured groups with respect to perceived fitness level.

In their extensive review, Stubbs et al., (1986) claim that the bulk of the literature suggests that neither height nor weight are associated risk factors for back pain. Snook (1989) however, listed obesity in a list of risk factors associated with back pain stating that it increases in the 20% most obese. One could deduce from this that while height and weight in general have little effect upon back injury, those who are considerably overweight may be more at risk perhaps because they are in poorer overall condition.

Grimes (1987) supports the view that back pain sufferers are more likely to be cigarette smokers and claims that nicotine reduces blood flow to the vertebral body which probably plays a role in spinal damage. In the study of staff nurses by Cato et al., (1989), more of the injured respondents smoked cigarettes than did the non-injured respondents, although the difference was not significant. Snook (1989) also listed cigarette smoking as one of a list of risk factors of low back pain claiming that back pain increases with increased levels of smoking.

A number of studies considered family and medical history as predictors of back symptoms. Owen et al. (1984) concluded that back injured workers were more likely to have had family members whose back symptoms had begun at an early age. Other studies assert that a past history of back problems is more likely to lead to subsequent back problems, and the liklihood increases if surgery has been performed upon the injury.

Stress or the vulnerability to stress have been mentioned by some investigators as being associated with back injuries although the bulk of the literature did not address psychological factors specifically (Gilad & Kirschenbaum, 1988; Owen & Damron, 1984; Magora, 1970). Reilly & Clavenger (1988) state that stress in nursing has an effect upon performance and productivity. They cite Hirsch & David (1983) who "contend that the characteristics of nurses responsibilities make hospital nursing stressful in distinct ways" (p. 127). They mention emotional overload, frustration with medical limitations and working with terminally ill and dying patients as stressors most frequently reported by nurses. According to Owen & Damron (1984), experiencing stress is likely to lead to more overall muscle tension placing muscles and joints in greater danger of injury. Magora (1970) found that psychological stress was a significant factor in back injury. Williamson et al. (1988) state that nurses must contend with both sick and dying patients together with interacting in a highly charged and frequently volatile environment. They conclude that nursing is a particularly stressful job with unique hazards requiring careful and intensive research.

In summary, back injured nurses are likely to be female, younger, of slightly lower physical fitness than their non-injured counterparts, come from a family with back problems, have had either or both previous back

episodes or surgery for back conditions, experience on-the-job stress and be cigarette smokers.

Other variables

Other variables which have been mentioned in relation to back injuries include attitude of staff and management to back injuries, reporting of injuries to management, staff shortages, treatment, committment to job, reasons for delay in the return to work, legislation and methodological issues which influence the reliability of back injury research (Harber et al., 1988; Linton, 1989; Cato et al., 1989; Swaffield, 1985; Huisman, 1988; New Zealand Department of Labour, 1990).

A number of studies suggest that inappropriate attitudes to occupational back injuries contribute to their occurrence and inhibit the effectiveness of training and back care programmes. Swaffield (1985), quoting a solicitor who deals with nurses' compensation claims reports that "...employers are remarkably unsympathetic to the claims of injured nurses. It's unheard of for them to accept liability. It's always the nurse's fault. It's part of the job - nurses *volunteer* to injure their backs."(author's italics) (Swaffield, 1985, p 973). Swaffield (1985), concludes that there is a need for a complete change in attitude among nurses at all levels before the problem can be prevented.

In his review of the literature, Snook (1989) found that management does not respond well to back pain and this response may be the most important part in the control of back disabilities. He suggests a three-pronged approach to alleviating the situation. Firstly that management must adopt a more positive acceptance of back pain with supervisory

of the workplace or job. Secondly, early intervention with in-house treatment and provision of light duties is suggested and, thirdly, follow-up and communication with the injured person while they are off work. This lets them know that the company is concerned in addition to keeping the employer in contact with their progress.

Stubbs et al. (1986) made a "final comment" regarding the efficiency of the communication system within the Health Service and suggested this be improved to assist with further studies. This break down in communication may be a reflection of the negative attitude toward back injury research within the health industry of the United Kingdom.

With respect to nurses' attitudes to prevention of back injuries, Harber et al. (1987) provide some interesting assertions. They argue that it is "socially, ethically and professionally unacceptable in the concept of the helping profession to change any patient care practices in the interests of nurses" (p. 968). They believe that employees' beliefs are extremely important in determining actual work practices and suggest that the philosophy underlying nursing practices must be investigated in combination with other possible solutions to the back pain problem which nurses are exposed to.

In discussing the risks involved in patient handling in New Zealand, Huisman (1988) regards the prevailing attitude to be the most difficult to deal with and believes it will take some time and effort to change it.

Description of task

Harber et al. (1988) assert that nursing has unique problems and hazards which set it apart from other professions in terms of analysis. It is useful to examine the type of work which would typically be required of a nurse during the course of a duty in order to understand the complex nature of the job and the difficulties encountered in research in the area. The brief description of some nursing tasks below illustrates the wide range of activities involved in the job. While tasks vary greatly depending upon the specific area a nurse is working in at any given time, most units require some direct lifting and/or manouvreing of the patient.

A nurse may be required to turn a patient in bed, lift them up the bed or transfer them from a bed to a chair and vice versa. Patients in wheelchairs may need to be straightened or adjusted. All of these require the nurse to lean and lift simultaneously. When transferring a patient from the bed to a chair, the nurse must also twist the torso in the middle of the lift while bearing the full weight of the load (patient). Additionally, non- or semi-ambulant patients may need assistance with walking, getting out of the bed, shower or bath.

The feeding of patients, attending to their personal care, hygiene and medical treatment is also the responsibility of the nurse. These tasks frequently require a nurse to lean or bend for extended periods. For example, attending to a surgical wound, washing a patient either in bed or in the bath and taking blood pressures.

Each of these tasks alone may not be such a burden but at any time there are some circumstances which make these tasks more difficult. Some patients may become disoriented, confused or aggressive, creating a

potentially more hazardous lifting situation for the nurse. Patients can sometimes be uncooperative or resist nurses efforts to administer care. They are generally heavy, can frequently be completely helpless and sometimes faint or slip during lifting transfers. Some patients, particularly those with spinal injuries, often experience muscle spasms which, if they occur during a lift or transfer can make the task much more difficult. Furthermore, "attachments" such as urinary catheters, intravenous tubing, prostheses and the like require extra care and are common hindrances in patient transfers.

In executing some of these tasks, nurses often find themselves in small restricted areas such as toilets, bathrooms, showers and bedrooms. Lifting in confined spaces reduces the likelihood of using correct lifting techniques or aids. Furthermore, there are occasions when situations arise where a patient or equipment must be lifted urgently in order to administer emergency care. These types of emergencies and the time pressures of a busy ward also contribute to the milieu of risks involved in the nursing occupation. Executing heavy lifts in either urgent or rushed circumstances inevitably leads to ill-prepared lifting and if coupled with any or all of the variables mentioned above places nurses at a very high risk of sustaining an injury to the back.

Risk Factors

Snook (1989) identified a number of low back pain risk factors and the proportion of back pain compensation they represented in the United States. Six of them are listed below.

Table 1.1

Some risk factors associated with lower back pain

Risk Factors	Compensation*
Manual handling tasks	63%
Lifting	18%
Twisting	18%
Bending	12%
Reaching	9%
Excessive weights, i.e. greater than 35lbs (15kg)	15%

(* This does not total to 100% as some factors may occur concurrently)

At least half of these risk factors are frequently associated with the job of nursing. The bulk of the literature cites one or more of the above factors as a component of nursing activities and mentions the role it may play in contributing to nurses' back injuries.

Andersson & Gunnar (1981) state that a combination of bending and twisting are the most frequent causes of back injuries in England. Other researchers have also established connections between bending and back injuries. (Huisman, 1988; Grimes, 1987). Andersson & Gunnar (1981) also report that a high prevalence of back disorders are usually found in jobs

involving very frequent heavy lifting and other researchers have found that sudden, unexpected and maximal efforts were particularly harmful. Lortie et al. (1987) state that "lifting constitutes an important risk factor" (p. 826) among nursing staff. Green (1989), in her study of a group of nurses at Burwood Hospital Spinal, Unit also cited lifting as the major cause of back injuries.

Additionally, repetitive work of any nature contributes to injury (Chaffin & Andersson, 1981). Some studies have indicated that incidence of back injuries is higher amongst nurses who have worked for long periods in one area or department and have attributed the repetitive nature of the work to be a contributing factor to back injury (Cato et al., 1989; Bessiér, 1989). Others, however, refuted that type of nursing had any significant effect upon back injury occurrence (Marchette & Marchette, 1985; McAbee, 1988).

Dynamic lifting as opposed to static lifting generally places the worker at a greater risk of injury (Andersson, 1981; Åstrand & Rodahl, 1986). Nursing frequently involves moving while lifting. For example, lifting a patient from a bed to the chair, depending upon the location of the chair, may require the nurse to step forward or sideways while taking the load of the patient.

These types of activities and the time pressures of a busy ward also contribute to the milieu of risks involved in the nursing occupation. Executing heavy lifts in either urgent or rushed circumstances inevitably leads to ill-prepared lifting and if coupled with any or all of the variables mentioned above places nurses at a very high risk of sustaining an injury to the back.

Methodological Issues

Due to the task and sample variability within nursing studies, there is a general lack of consistency in the literature. Tasks vary according to unit, status and shift, and subjects vary according to status, tenure and training. Tasks also vary between patients within any given area on any given shift. Additionally, inconsistencies arise because of the occurence of emergencies which cannot be controlled for (Stubbs, 1986; McAbee, 1985).

Much of the research into back injuries amongst nurses is based upon subjects' own reports which again adds to the variability. Stubbs et al., (1986) in their extensive review of the literature, point out that reporting procedures for back injuries are not standardized and this makes comparison between studies difficult. They suggest the need for a standardised reporting procedure.

Finally, the actual number of back injuries may never be known because it is apparent that nurses do not always report back injuries. For example, Willer (1989) in her study found that less than 4% of staff with back pain had reported it to management.

Prevention Strategies

Among the prevention strategies, the most frequently suggested are increased staffing levels, ergonomic solutions such as redesign of small bath and toilet areas, greater committment by management to prevention of back injuries, more education in lifting techniques, and more lifting equipment (Cato, 1989; McAbee,1989; Huisman, 1988; Brown, 1988). One study used interventions at the treatment stage of back injuries to minimise time off and the liklihood of recurrence (Linton,1989). Assuming that these actions

have been carried out as suggested, they appear to have had little or no effect.

Summary

It is apparent from the literature that nurses are indeed at a high risk of back injuries from their work. Not so apparent, however, are the specific factors which precipitate back injuries to nurses. The role of age, gender physical characteristics, health, family history and environmental factors have all been investigated with respect to the occurrence of occupational back injuries amongst nurses. However no one factor or specific combination has been identified. Stubbs et al. (1986) prefer to consider back injuries to be the result of the cumulative effect of a number of factors.

The efforts to reduce the incidence have not been entirely successful. Various studies have been devoted to the ergonomic design of the work place, while a number of training programmes have been implemented and evaluated. As the figures show, there is little conclusive evidence that a reduction of back injuries has been achieved.

Nursing is an occupation where nurses have as their main task, the responsibility for the comfort, health and welfare of a fellow human being. Given this task, nurses frequently deal with patients who may be in pain, uncomfortable and helpless. If during the course of carrying out the task a nurse becomes injured she may be faced with a choice of attending to her own injury, leaving a dependent patient to fend for themselves, or ignoring her own pain to continue to care for the patients.

Back injuries and back pain are regarded by some as a major occupational hazard of nursing (Khalil, 1987). Numerous studies have been devoted to the incidence, prevalence and variables associated with low back

pain amongst nursing staff, and yet backpain still occurs. It appears, therefore, that the causes have not been accurately identified or that little has been done to alleviate the situation.

This study aims to explore a somewhat new dimension within the research. The study seeks to 1) investigate back injured nurses' perceptions of their own pain relative to that of their patients' 2) what treatment nurses seek and receive and 3), the extent to which a combination of these two factors influences the delay between the initial injury and the cessation of work.

Research aims

The three hypotheses upon which this study is based are

1. That back injured nurses' perceptions of their own pain relative to that of their patients is a factor in taking time off work.

2. That nurses have a tendency to self-diagnose, self-treat and/or seek 'on-the-job' advice and treatment rather than medical attention of a more formal nature.

3. That these two factors increase the delay between the initial injury and cessation of work as well as the total amount of time taken off work.

Chapter Three

Method

The research was conducted by a post-graduate psychology student who is also a New Zealand Enrolled Nurse with six years varied nursing experience.

Subjects

The subjects were fifteen volunteer female nursing personnel from within the Canterbury Area Health Board who had injured their backs at least once at work. The age range of subjects was wide (23 years to 50 years with a mean age of 36 years) and probably represented some of the youngest qualified nurses to the oldest practising nurses.

Job details

Subjects were all either Registered Nurses or Registered Comprehensive Nurses[1] either at the time of interview or at some time previous, employed within the Canterbury area. All nurses had completed training and had been practising for a number of years at the time of the interview. Some subjects had an initial injury sustained as a student, but all were qualified at the time of the interview.

The number of subjects employed full-time at the time of their injury was 12 (85%) in both initial and subsequent conditions, and two (14%) were employed part-time. One subject in each condition reported either an initial or subsequent injury, but not both, which accounts for only 14 subjects recorded as being employed.

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[1]A Registered Nurse is one who has completed either a three year hospital or polytechnic training. The former is known as a General Nurse or Registered (RN) and the latter is known as a Registered Comprehensive Nurse (R. Com.N). Both assume the title of "Staff Nurse" in their place of work.

Recruitment

Subjects were contacted by one of two methods. Firstly, a typewritten notice inviting nurses to participate was displayed on the staff notice board and in the nursing newsletter at both Burwood and Princess Margaret Hospitals in Christchurch. Secondly, subjects were contacted via people known to the researcher through a process of communication amongst colleagues. The latter method proved to be the most effective means of contact.

Criteria

The only criterion for inclusion in the study was a history of injury to the back or neck while on the job. The filing of an incident form was excluded as a criterion so as not to create a bias toward only those back injured nurses who had reported the injury and were probably thereby receiving monetary compensation (from the Accident Compensation Commission). Those who had completed incident forms were not excluded. While most of the nurses' inital injuries were a result of a work injury, some were work injuries sustained subsequent to a previous non-work injury. Some had only one injury which had created long-term problems. Some had only one injury with no recurring symptoms.

Instruments and procedure

A questionnaire, developed by the researcher was the only instrument used. It comprised 36 questions regarding events surrounding the subjects' back injuries and/or back pain and subjects' perceptions of them. Subjects were also asked to complete nine biographical questions (see Appendix 3).

After obtaining ethical approval from the Canterbury Area Health Board, nurses were invited to participate in a person to person semi-structured interview of about 20 minutes duration.

A mutually convenient time was arranged by telephone and in most cases, interviews were carried out at the subject's own home. One subject, who lived out of town, was interviewed at the university; another three were interviewed at their place of work during their meal break. Although attempts were made to meet subjects at their place of work before or after duty as it was thought this may aid recall of events surrounding the injury, and might be logistically more convenient, this was not found to be the case. With the exceptions mentioned above, subjects did not wish to be interviewed at their workplace, preferring instead to be interviewed at home.

A brief resumé of the topic and intentions of the research was read to each subject (see Appendix 1). This resumé introduced the topic giving only general information of the research aims so as not to bias the subjects. This was followed by the presentation of a consent form which each subject was asked to read and sign (see Appendix 2). At the completion of the questionnnaire (see Appendix 3), subjects were invited to ask any questions or make any comments. All subjects were then asked to complete nine biographical questions (see Appendix 4). Finally, a contact address for results and debriefing was requested and contact details of the researcher were provided should there be any additional questions or comments.

Data was gathered from two conditions: initial and subsequent. The initial condition refers to the first or predisposing incident or injury which may or may not have been identified prior to the occurrence of the second or

subsequent injury. Subjects have reported to both in some questions and only one in other questions. Sometimes there was an incident or injury for which no action was taken.

Debriefing

At the completion of data collection, subjects were contacted by telephone and informed in full of the three hypotheses together with the reasons for not giving this information at the initial interview. They were again invited to make any comments regarding this additional information (see Appendix 5).

Chapter Four

Results

Subjects' comments are quoted where appropriate to provide qualitative support for the quantitative analysis of the responses to questions. Many of the comments are negative, reflecting the dissatisfaction experienced by most of the subjects. Comments made are not necessarily representative of nurses at large due to the small sample size, however comments from the majority of the subjects represent similar views within the sample.

Subject Response

Response rate from the initial invitation which was posted on notice boards in hospitals was low. However, response to interviews once contact had been made was 100%. All subjects who were able to be contacted agreed to participate and while no subjects declined to be interviewed, one subject declined to be interviewed in person, preferring instead to be interviewed over the telephone. Data from this subject have been treated identically to the rest.

Data Analysis

Data were analysed using Statview II statistical package. The primary analysis consisted of Spearman rank correlations to identify the relationships between variables. Secondary analysis included frequency calculations of some of the other variables.

Job Characteristics

Shift

Results indicated a tendency for injuries to occur more frequently on the morning shift (either 6.45a.m. to 3.15p.m. or 8a.m to 4.30p.m.) than on either the afternoon or night shift.

Location

Of the 26 recorded injuries in the sample, 10 injuries occurred in a spinal or rehabilitation unit and 6 each in a psycho-geriatric or geriatric ward, the remainder occurred in either rehabilitation, acute emergency or medical units. In most but not all cases, nurses were working in the same area in both initial and subsequent conditions.

Fitness and Exercise

In the sample, 53% estimated their level of fitness to be 'medium' (4 on a 7-point scale) and 26% slightly less than 'medium' fitness (3 on the scale). Daily walking, in addition to their normal work activities, was reported by 75% of the subjects as the most frequent physical activity they participated in. When asked if they did any stretching exercises before they began their duty, 46% replied that they 'never' did any while 26% replied they 'sometimes' did, 6% replied that they 'frequently' did stretching exercises before duty and 20% reported that they 'always' did.

Injury Occurrence

Almost all injuries were sustained during the lifting of a patient. Two exceptions which were non-patient or non-work activities were turning to speak to someone during the serving of a meal at work and bedmaking at home. Both of these injuries appeared to be associated with the initial condition sustained from patient handling activities.

Nurses' Perceptions of Pain

All nurses reported that pain accompanied their own injury. In contrast, eight of the nurses in each condition reported their patients as being in 'no pain'. These nurses were working in either geriatric, psycho-geriatric wards or a spinal unit at the time of their injury.

No significant correlation overall was found between nurses' perceptions of their patients' pain and their perceptions of their own pain. Only two nurses in each condition (4 in total) reported their patients' pain as being more severe (on a 7-point scale) than their own while they were nursing them.

Decisions

In the initial condition, as Table 4.1 shows, 15% of the sample made no conscious decision, 61% knew they had injured their back but continued lifting, and 23% made a decision to avoid lifting (the latter two categories are mutually exclusive). No decision usually implied that at the time the subject was not aware of any pain or had no recollection of any specific thoughts either way about injury or pain. The response "I knew I'd injured my back" implied a conscious decision although subjects did not indicate they had made a specific self-diagnosis. The third response was that the subject had made a conscious decision to avoid lifting. In most cases this decision had been verbalised to fellow staff members. In general, this decision was heeded by colleagues and, where possible, the injured subject had been able to avoid lifting for the remainder of the duty.

Table 4.1

Decisions regarding injury

	Initial	Subsequent
No conscious decision	15%	75%
Aware of injury to back	61%	84%
Decision to avoid	23%	7%

In the subsequent condition, 75% of subjects made no conscious decision, 84% knew they had injured their back and 7% made a decision to avoid lifting.

Of those who responded that they knew they had injured their back, 50% were debilitated and 75% took time off work to receive both advice and treatment. One of the subjects who was debilitated did not seek medical advice immediately, but did so within one week. Of those who knew they had injured their back but were not debilitated, none sought advice or treatment immediately. One sought advice and treatment the same day and the remainder sought treatment within the week. Two of the four who were not debilitated took time off work to seek advice or treatment. In the subsequent condition, of those who knew they had injured their back few were debilitated and all but one took time off work to receive attention; this subject was already off work with an unrelated illness. Only two subjects from this sample sought treatment immediately, while almost half (44%) sought treatment within a day and all within one week -- mostly within two or three days.

Incident Forms

In the initial condition, only 45% completed an incident form regarding their injury. In the subsequent condition, 66% completed an

incident form. Overall, of the subjects who knew they had injured their back, only 37.5 % completed an incident form.

Pain and Seeking Treatment

A correlation was computed between the level of nurses' pain and the time between injury and the seeking of advice and treatment. No significant result was revealed in the initial condition or the subsequent condition for the seeking of advice. However, the correlation between level of nurses pain and the seeking of treatment showed a significant result (Initial: r =.583, n = 10 p <.05; Subsequent:r = .604,n = 12 p<.05).

Only three subjects reported a difference between time taken between injury and the seeking of advice and the seeking of treatment between initial and subsequent conditions, i.e., most subjects sought advice and treatment at the same time. Each of these three subjects sought advice from medical personnel within the hospital either immediately or the same day in both the initial and the subsequent condition. One of these three did not take time off duty while the other two did, which, in all three cases was sooner in the subsequent condition than in the initial condition.

In the initial condition, one subject, who rated her own pain level as '6' and her patients' as '5' did not take time off duty but sought advice and treatment the same day. Another subject, who rated her own pain as '7' and her patients' as '4', sought advice immediately and treatment within one week taking time off duty to do both. In the subsequent condition two subjects rated their patients' pain as '6' and their own as '5'. Neither sought advice or treatment immediately, although one who said she was debilitated sought advice and treatment the same day and took time off work to do so. The other subject sought advice and treatment within three days and also took time off work.

Of those who sought advice immediately in both conditions four (26%) of them rated their own pain as '7' and their patients as having "no pain" ('1' on a 7-point scale). One of these subjects received treatment the same day but not immediately, while another two sought and received treatment either the same day or within one week respectively. Seeking treatment immediately, occurred more frequently in the subsequent condition than in the initial condition.

In the initial condition, the analysis indicated that the greater the level of pain, experienced by the nurse, the earlier treatment was sought. In contrast, in the subsequent condition, only one of two subjects who recorded their level of pain as "severe" sought immediate treatment.

Type of Treatment

Self-treatment and self-diagnosis

Among the subjects who self-treated, it was not apparent that they made a specific diagnosis regarding their condition. Overall, 47% of the sample self treated at some time following their injuries in the initial condition and 33% in the subsequent condition.

In the initial condition, 26% of the sample reported self-treatment as the first course of action following their injury whereas in the subsequent condition, 13% self-treated first. Only one subject self-treated first in both conditions.

Pain level of those who self-treated. Only one subject who recorded a pain level of '7' ("severe") in the initial condition reported self-treatment as a first option. The same is true in the subsequent condition although they were different subjects.

On-the-job advice

The person or professional from whom treatment was most frequently sought was a General Practitioner in both conditions. In 55% of the cases in the initial condition, the person seen was working within the same hospital at the time of the consultation while in the subsequent condition, 63% were working within the same hospital at the time of consultation. However, in both conditions, few nurses were actually working alongside the doctor or person at the time of the consultation. In the initial condition, 12% had been working with doctors when they consulted them and, in the subsequent condition only 8%.

Only one nurse within the sample reported having sought treatment from another nurse. Following her injury, she went home, took some pain relief and phoned a nursing friend who referred her to a General Practitioner.

Of the six subjects who recorded their own pain as "severe" and their patients as being in no pain, no trend was apparent with respect to the type of treatment which they sought. All reported a different type of treatment, i.e., General Practitioner, Hospital Physician, Nurses Doctor, Hospital Doctor, Self-medication and House Surgeon.

Treatment Received

Most subjects received either a brief or comprehensive visual check and examination of the affected area. The majority of this attention was from a General Practitioner. Four subjects received referrals to other medical professionals, mostly physiotherapists. Three in both conditions were

Adequacy of the Treatment Received

Adequacy was assessed in terms of the subjects' view of how appropriate or comprehensive they thought their treatment had been. Although the majority of the sample indicated treatment had been adequate, a number of subjects indicated the advice and/or treatment they had received had not been adequate. One subject, who felt she had not received a full examination, believed that a more comprehensive examination *"...would have revealed a dislocated vertebra"*. She believed that as a result of inaccurate diagnosis inappropriate treatment was prescribed and consequently her injury took longer to heal.

Another subject who had a"'brief visual check and examination *"didn't think the house surgeon knew what he was doing...."* Another, who also had a "brief check" felt that *"another X-ray should have been taken"* . One subject thought that the treatment she received was adequate *"because he* [the doctor] *knows best - but I probably should have had an X-Ray."* Yet another subject who received *"only a brief examination"* stated that *"if he'd felt it* [the injured site] *he would have known straight away ... and could have diagnosed it immediately"*.

Several subjects replied they thought the treatment was adequate*"at the time"* and when questioned further they indicated that later on they thought differently and would have preferred a more comprehensive examination, in some cases by a more senior person, and an X-ray.

Intended Action on Succeeding Occasions

In the initial condition, 80% of subjects indicated they would act differently next time they became injured while in the subsequent condition, only 55% indicated they would act differently on succeeding. As Table 4.2 shows, the most frequent action which subjects reported they would take next time was to leave work immediately. In the initial condition, 30% of the subjects indicated they would leave work immediately, 20% indicated they would they would seek the attention and advice of a specific person and 9% respectively indicated they would seek non-conventional medicine, take more time off work or seek more advice about ongoing care and exercise to strengthen the back. In the subsequent condition, 30% indicated they would leave work immediately, 15% indicated they would seek the advice and attention of a specific person and 5% respectively indicated they would seek non-conventional medicine or take more time off work.

Table 4.2

Intended action on succeeding occasions

	Initial	Subsequent
Leave work immediately	33%	30%
Seek advice and attention of specific person	27%	15%
Seek non-conventional medicine	9%	5%
Take more time off	9%	5%
Seek more advice	9%	0%

Taking Time off Work

Taking time off work to receive attention

In the initial condition, 70% of respondents reported that they took time off duty to receive medical attention and in the subsequent condition 73% reported that they took time off duty to receive attention. Reasons associated with the decision to take time off duty following a back injury or back pain while on duty are presented in Table 4.3.

Table 4.3.

Reasons associated with decision whether to take time off work

Taking time off		
	Initial	**Subsequent**
Debilitated	40%	45%
Supervisor aware	15%	30%
Staff available	10%	3%
Clinic Open	5%	0%
Not taking time off		
	Initial	**Subsequent**
Obligation to staff/patient	8%	7%
No staff available	10%	8%
Underestimated extent...*	12%	7%

(*Subjects underestimated the extent of their injury)

Of those who did take time off duty to receive medical attention, 40% of them were debilitated, 15% indicated that the supervisor was aware of their condition, 10% reported there was extra staff available and 5% reported that the nurses' health clinic was only open at specific times during which they had to attend to receive medical attention. Of those who did not take time off duty to receive medical attention in the initial condition 8% reported feeling obligated to fellow staff members and/or patients, 10% reported there

was no other staff available to take over and 12% underestimated the extent of their injury. In the subsequent condition, 7% reported feeling obligated to fellow staff members or patients, 8% reported that there were no other staff available and 7% reported underestimating the extent of their injury.

Total amount of time taken off work

The average amount of time in total which subjects reported taking off work was several days up to about 4 weeks and usually between 5 and 6 days. A maximum period of time off could not be ascertained because some subjects had left work altogether because of their back injury.

In the initial condition, 60% of subjects thought the time they had off work was enough and in the subsequent condition, 75% thought it was enough. Of those remaining 40% and 25% respectively, in each condition, who didn't think they had had enough time off work most made comments to the effect that they felt obligated to fellow staff members to return to work.

Equipment and lifting

No subjects in the sample reported having used equipment when lifting. As Table 4.4 shows, in the initial condition, 30% reported having had no assistance, 61% reported having had one other person assisting, 7% had two or more people helping. In the subsequent condition, 55.% reported having had one other person assisting and 11% had assistance from two or more people.

Table 4.4.

Assistance with lifting

	Initial	Subsequent
No assistance	30%	33%
One person	61%	7%
Two or more people	55%	11%

Comments about equipment and lifting are summarised in Table 4.5. Of all the comments made about equipment, 47% implied that there was an inadequate supply of equipment and 13% reported that insufficient use was made of the equipment available.

Table 4.5

Comments regarding equipment and lifting

Inadequate provision	47%
Insufficient use	13%
Insufficient staff	13%
Reluctance to request assistance	13%
Incompetent staff	20%

With respect to lifting, 13% of comments made, indicated that there was insufficient staff to assist with lifting, 13% reported being reluctant to request assistance with lifting and 20% reported that staff either did not or did not know how to execute lifts correctly, or did not know how to operate equipment.

Education in lifting

Dissatisfaction was expressed by all respondents with the amount, frequency/irregularity of training and education in lifting.

General comments

At the end of the questionnaire, subjects were invited to respond with any other general comments regarding their injury, their actions and their treatment. A summary of these comments are presented in Table 4.6.

Table 4.6

General comments

Dissatisfaction with administration	33%
Busy/Understaffed	26%
Expectation of becoming injured	13%
Dissatisfaction with incompetent staff	7%

Summary

In summary, the sample consisted of 15 female nurses who had injured their backs while lifting or manoevering a patient. In general, the nurses perceived their own pain to be greater than that of their patients and there was no significant correlation between the nurses perception of their own pain and their perception of their patient' pain. Statistically, nurses perceptions of their own pain relative to their patients' pain had no effect upon the delay between cessation of work and the seeking of treatment nor the type of treatment sought. However, some of the comments seem to support the concept that a sense of responsibility to both colleagues and patients affects the delay between the injury and taking time off work. Almost half of the sample self-treated at some time following their initial injury and a little more than one third in the subsequent condition. One quarter of the sample chose self-treatment as a first option. Generally,

however, nurses did not self-diagnose, although one quarter reported having made a decision to avoid lifting where possible immediately after their injury and until they had sought treatment. More subjects sought advice and treatment from a General Practitioner with a little over half of the subjects seeking treatment from someone within the hospital.

Although most of the sample said they had found the treatment they received to be adequate, most of them claimed they would act differently if they became injured again.

Overall, it was apparent that nurses failed to cease work immediately following a back injury and returned to work early out of a sense of obligation or responsibility to colleagues and patients. There was general trend for nurses to take more time off in the subsequent condition than in the initial condition.

Amongst the nurses there was a general feeling that there was inadequate treatment, support and assistance surrounding the risks and management of nurses with back injuries. Several comments were made regarding dissatisfaction with support from hierarchy, education about back injuries and the lack of staff and equipment in "heavy areas".

Chapter Five

Discussion

The aim of this research was threefold. Firstly it attempted to examine the perceptions of injured nurses with regard to their own health relative to that of their patients and the extent to which this affected taking time off work. Secondly, it aimed to investigate what treatment these nurses seek and receive when injured at work and thirdly, it attempted to explore the extent to which these factors affect the total amount of time off work.

Research aims will be addressed in relation to the initial hypotheses. Following this, some of the other findings and general comments from subjects will be discussed. Finally some recomendations will be presented.

Nurses' perceptions of pain

The primary hypothesis which stated that back injured nurses' perceptions of their own pain relative to that of their patients is a factor in taking time off work was not supported statistically. However, many of the findings suggest that nurses perceptions of pain do contribute to taking time off work. More than half of the nurses reported that their patients were in no pain and therefore were not in a situation to have their pain level compared to that of their patients. Effectively, therefore, this hypothesis did not apply to the entire sample. Those to whom it did apply, it seemed, were affected by their patients condition and delayed seeking treatment until they were off duty. Overall and with reference to some of the comments nurses made and actions they took, their thoughts and considerations for their patients contributed to some extent to the delay in ceasing work following a

work injury. Additionally, nurses statements of intentions if injured again suggest they would perhaps be less considerate of others and stop work earlier. Of those who did give their patients a pain rating, again there was no statistically significant correlation, a finding which limits the support of the hypothesis. In some cases, therefore, the rating therefore, of a patient may not have been an absolute indication of the perceived pain, but of the overall level of discomfort and dependence or helplessness.

One of the subjects who rated her patients' pain as more severe than her own was working in a spinal unit (a specialised unit devoted to the care and rehabilitation of spinally injured patients usually paraplegic or tetraplegic). In general, these patients are completely dependent, especially in the initial stages following their injury and in addition are traumatised physically and emotionally. Separating pain from any of these typical characteristics of a serious spinal injury would be difficult if not impossible. Two other nurses in the study, also working in the same unit at the time of their respective back injuries rated their patients as having no pain. These differences between the nurses' ratings of the same group of patients highlights the inherent difficulties of rating pain which is such an individual experience. However, within the context of this study the intention was not to measure pain on an objective scale but to identify the level of pain perceived by the nurse of both herself and her patients.

Decisions

A large number of subjects reported having made no conscious decision regarding their injury while a relatively small proportion of back injured nurses made a conscious decision to avoid lifting following their back injury. Those who did not make a decision either way may have bee

too busy in the ward to stop and worry about themselves or, as some of them indicated, they "didn't think it was bad enough". Several made decisions to avoid lifting which when voiced were apparently heeded by colleagues. This decision to avoid lifting could be regarded as self-treatment.

Not all who reported having known they had injured their back took time off work either immediately or to seek advice or treatment. Perhaps again they did not think it "bad enough" to warrant a decision. Perhaps also, nurses have some sort of inherent sense of invincibility. Alternatively, they may have a general complacency with regard to their own health (the Kiwi "I'm invincible" image?). Another postulate is that nurses have an inherent primary concern for patients who are in need and, due to already tight budgets and consequent staff shortages, nurses "soldier on" regardless.

Questioning subjects about their decisions at a time in the past is awkward. The question "What decisions did you make at the time?" requires the subjects to remember what they had been thinking at the time immediately following their injury which, in some cases was some time ago. The time delay since the injury may affect accuracy of recall. At the time the subject may not have made a conscious decision that she can actually recall while subconsciously she may have acknowledged some pain or discomfort and without necessarily thinking about it, and may have taken precautions to protect the injured area. She may have either denied sustaining an injury at the time or denied experiencing pain as the result of an incident or injury. Alternatively she may deny pain at the time of the interview. Subjects will not necessarily be entirely frank with a researcher. Researchers assume that subjects are honest with their responses, and subjective research depends upon this. The fact that subjects contacted the researcher rather than the

reverse implies that they firstly acknowledged they had an injury and pain and secondly that they were prepared to be candid in their responses. This research assumes that subjects' responses are accurate.

Incident forms

A number of subjects did not complete incident forms. Reasons for not completing an incident form were not investigated in this study. Thus, possible reasons for this can only be speculatory and derived from unspecific comments from the subjects. Nurses, in general, were of the opinion that back injuries are largely ignored by administrative staff and that back injuries are an unavoidable occupational hazard. Completing an incident form therefore is viewed by some as futile and time wasting. Frequently, those nurses who had not reported their injuries were those who had not taken time off work immediately and it could be assumed that since they did not acknowledge it in terms of taking time off duty, it was inconsistent to acknowledge it in writing.

It is ironic however, that if a patient is injured during a lifting or transferring activity, an incident form is completed to ensure protection of the patient from the nurse. Conversely, the nurse frequently chooses not to protect herself from the patient by not completing an incident form.

Pain and seeking treatment

Those subjects who reported their patients as being in no pain sought treatment sooner. This leads to a debate about whether it was the severity of the nurse's pain or the absence of patients' pain which prompted the nurse to seek treatment sooner. Or, due to the retrospective nature of the study, perhaps nurses reported the patient as being in no pain since they had left

work and sought treatment immediately and in doing so somehow justify themselves leaving work. Where nurses rated their patient's pain as more severe than their own, they did not generally seek treatment immediately.

As might be expected, (disregarding, for the moment, the level of pain of the patient) the more severe the nurse's pain the sooner she sought treatment. Furthermore, there appeared to be no trend between seeking treatment and the level of nurses pain compared to the patients' pain. Nurses perceiving their patients to be in more pain than themselves tended to delay seeking medical attention for their own injury. This may be out of a sense of responsibility or obligation to their patients whom they may regard as being in greater need of attention than themselves.

One quarter of the subjects who did seek treatment immediately had recorded their own pain as severe and their patients as having no pain. Given that nurses considered their patients to be free of pain, they may also perceive them to be not as needy (i.e. more independent than if in pain). Interestingly, of the three nurses who injured their back whilst working in the spinal unit, none sought treatment, or left work immediately following their injury, although all knew they had injured their back. At other times they had continued to work until the end of their duty with a tired and aching back from lifting. It may be that these nurses regarded their patients as being in great need due to their profound disability and dependence. When nursing someone who is profoundly disabled and in need of constant assistance for every function, a twinge of pain in one's own back while caring for such a patient may seem minor in comparison. As human beings, there is a tendency to care for the needy; women, perhaps perceive this to a greater extent than men, given their maternal and nurturing role in the

biological sense. Furthermore, choosing nursing as a profession implies an altruistic tendency.

At the initial interview, some subjects stated they had chosen not to go off duty following an injury because they didn't think their injury was "bad enough" or the ward was short staffed (i.e. not enough staff to do the work and even less if they were to go off duty). Although the results do not provide overwhelming support for this notion of altruism, they do suggest that this may be the case.

Type of treatment

Self-treatment and self-diagnosis

The first part of the second hypothesis which stated that nurses have a tendency to self-diagnose and self-treat was not well supported. Only 47% and 33% respectively in each condition self-treated. In defining "self-treatment" the arbitrary nature of the term must be acknowledged. Self-treatment can mean going off duty voluntarily, resting at home, taking pain relief or avoiding lifting or bending tasks. Some subjects may have self-treated and not considered it to be that. While subjects' reports during the interview were not ambiguous, there could have been omissions regarding avoiding lifting and resting at home before seeing a doctor the next day. Similarly, self-diagnosis may not have been accurately reported. These self-treatments may also have involved some type of self-diagnosis not followed by self-treatment.

Pain level of those who self-treated. With only one exception, subjects who reported their own pain as severe sought immediate treatment. Their judgment of their condition, therefore, was that if it were of a severe nature

they sought professional medical advice, as one would expect of nurses. However, it is of some concern that unless the pain was considered severe nurses typically did not seek treatment immediately. In most cases there was some delay in seeking treatment.

On the job advice

Due to the proximity of medical personnel within a hospital it was expected that nurses may seek professional advice from their colleagues. Contrary to expectations, this was not entirely the case with half of the sample seeking advice and treatment from a general practitioner outside of the hospital they were working in at the time. A high proportion however, did seek advice from people who worked within the hospital. Nurses in the sample may have been working alongside doctors who were too busy to consult. Alternatively nurses may experience some degree of embarrassment or need for privacy with doctors whom they work with and therefore consult their own doctor.

Adequacy of treatment

Most subjects in the initial condition found the treatment they received to be inadequate. In the subsequent condition subjects were more cautious with lifting, left work earlier and sought treatment sooner.

Some felt dissatisfied with treatment retrospectively although at the time they had thought it was adequate. Now, after the injury and treatment, they have more knowledge of what the condition and diagnosis was and how long it took to heal; hence it is easier to be dissatisfied in retrospect. Anyone in pain is likely to feel negative and have a tendency to blame someone else. Never-the-less some subjects truly felt they had received

inadequate treatment. Few subjects reported having had X-rays and yet most were prescribed some type of specialised treatment for their injury.

Since X-ray is a useful diagnostic technique, it is surprising that only a small proportion of the sample of back injured nurses had X-rays after their injuries. This leads one to question the adequacy of the treatment that nurses receive. It is not within the bounds of this research to make any judgments about this but it may be a direction for future research.

Intended Action Next Time

Upon prompting by the question "If you became injured again would you act differently?", many in the sample indicated they would act differently should they become injured again. This was more frequently the case in the initial conditions, i.e. subjects said they would act differently to what they did the first time. This implies a sense of learning from their mistakes which when dealing with a persons' health gives cause for concern. Within the medical profession in particular, one would expect that an illness would be adequately dealt with immediately and would not be a process of trial and error.

Taking Time off Work

It is difficult to decide if the nurses' perception of the patients' pain affects total amount of time taken off work. Once a nurse is off work the influence of patients' conditions is likely to be minimal.

Some nurses commented about feeling obligated to return to work and sometimes did so despite not being completely fit. The obligation was more directed at fellow staff members, who would have to work "twice as hard"

staff is off sick, than to suffering patients.

Delay in ceasing work and not receiving immediate advice and treatment contributes greatly to the total amount of time taken off work. If a nurse makes no decision it leads to delay in taking time off work which means that they are likely to participate in more lifting bending and twisting. Avoiding lifting and thereby not exposing the back to stress or strain is a positive step toward self-treatment. The back, however, is still exposed to walking, stretching twisting and bending all of which are likely to increase the damage sustained already and delay the seeking of advice or treatment which in turn, may increase the total time taken off work. A major amount of healing of an injury occurs in the first week following the injury and healing is promoted with rest (Alexander, 1991). Going off work immediately, therefore, is the most pertinent action indicated.

For nurses, going off duty may be more difficult than is apparent. In nursing, "the task" involves sick people in need of care. In other jobs, the task can usually be put aside until the sick or injured person returns to work or, if urgent someone else can probably attend to the job according to its priority. In some areas of nursing, particularly "heavy areas", patients are in constant need of care. Although their respective individual needs can be prioritised, it is difficult and sometimes demeaning for patients to have their needs prioritised according to someone else's judgment. Some do not understand or simply cannot wait. Invariably emergency situations arise, completely interrupting any prioritising which may have been done.

Nurses cannot "drop everything" and go off duty because it may mean leaving a patient "unturned or untoileted" or, "on the floor". Although this, in theory is what they ought to do, few nurses can actually do that

(Swaffield, 1985)

Job Characteristics

Shifts

Although all shifts were represented in the study, back injuries occurred more frequently on the morning shift (either 6.45a.m. to 3.15p.m. or 8a.m to 4.30p.m.). The morning shift is generally the busiest with a number of things happening usually within a limited time frame. Patients have to be fed, washed, dressed and have their beds made usually all between 7a.m. and 9a.m. Additionally, during this time, drugs are administered, various daily treatments are carried out, nurses receive "report' from the night staff and some wards have a further report with the Charge Nurse later in the morning. Furthermore, doctors usually have a ward "round" during the morning, where they visit each of their patients to check on their progress. All of these activities place demands on the nurse to get things done quickly creating a potentially stressful work environment. As a number of the nurses mentioned in the interview, time pressures were a contributing factor in the occurrence of back injuries.

The afternoon shift is usually less frantic and seldom interrupted by doctors' rounds and patients are usually resting and receiving visitors. Similarly, the night shift in most areas is more relaxed with most patients asleep and there is less work for staff to do. However, there are comparatively less staff on both of these shifts which means the care of the same number of patients is managed by fewer staff.

finding was in line with other research and appears logical given that these areas require more frequent lifting of patients.

Fitness and Exercise

Most of the subjects in the sample judged themselves to be of medium or almost medium fitness. None reported themselves as being "very fit". Given that subjects were back injured, it is not surprising that they did not report participating in much exercise and activity other than walking and swimming. Few subjects reported always stretching before duty and yet the weights lifted by nurses at times are considerable. One study found that in the course of one hour's work two nurses lifted the equivalent of 2.2 tonnes in weight (Sadler 1987). When athletes participate in heavy or active physical exercise, they always stretch and warm-up prior to the exercise. There may be some implications for education of nurses with regard to lifting preparation.

Injury Occurrence

Not surprisingly, most injuries were sustained from patient handling activities. Again, this is what has been found in previous studies. Those two injuries in this study which were not sustained from a patient handling activity were diagnosed as linked to some preexisting condition brought about by patient handling activities. By and large therefore, patient handling activities appeared to be responsible for the back injuries sustained by nurses in this study.

General comments

Dissatisfaction was expressed with respect to the adequacy of treatment and management of back injuries and follow-up assistance and support.

This dissatisfaction was directed in some cases toward the administration and their attitude towards back injury sufferers and their return to work. Additionally, concern was expressed about the need for complete medical fitness before a return to work was permitted. Nurses felt that a return to work on light duties would help financially and emotionally. Light duties was also suggested by a physiotherapist (Alexander, 1991).

The nurses in the study showed a tendency to learn from bad experiences. This was demonstrated in the study by the differences between the initial and the subsequent conditions. Nurses indicated that "next time" they would stop lifting, stop work sooner, seek adequate professional advice and attention earlier and stay off work until their back was properly healed. Additionally, some stated they would take more care with lifting in future and feel less obliged to lift if they thought conditions were unfavourable. Furthermore, a number indicated they would be more assertive in asking for assistance with lifting and requesting lifting equipment.

Lack of Education

Many views of the nurses in this study regarding education were similar. Generally, they implied a need for more frequent, regular and ongoing training in basic and specific lifting techniques. Additionally, comments were made regarding a need for standardisation of lifting techniques.

It is important to note that physiotherapists seem to be sensitive to requests from nurses to advise about lifting. When requested, physiotherapists will visit and advise on specific techniques for patients with special needs. It was noted that some nurses felt that physiotherapists should be more available than they are currently. This could be due to two

reasons. Firstly, physiotherapy departments are short staffed and there are not always enough staff to visit frequently. Secondly, perhaps it is assumed that when nurses do not ask for advice or education about lifting that they know it and use it and do not encounter any problems. It may be more accurate that nurses just do not have time to request assistance from the physiotherapists with lifting. In speaking to physiotherapy staff from within some of the hospitals they all indicated that due to staff cuts within their departments they were no longer able to provide the in-service education to nursing staff that they once did. They all expressed frustration and concern about this situation. Correct and safe lifting is as much a part of the care and attention of the patient as their other medical care.

There was a suggestion that some of the nursing administration were opposed to education about correct lifting, claiming that it was time wasting because nurses knew how to lift already. Interestingly, however, the majority of the sample supported the need for more frequent and ongoing education.

Recommendations

Prevention of occurrence is obviously the ideal solution to the problem of back injuries. Other studies have explored prevention possibilities and developed numerous strategies. Unfortunately, back injuries continue to occur.

Cease work immediately

The major suggestion derived from the current research is that nurses should be encouraged to stop work immediately when they become injured. They should then seek treatment as soon as possible and stay off work until completely fit, unless there is a provision for a return to work under the condition of light duties. Currently this is not possible within the Canterbury Area Health Board.

Staff rotation

Additionally, in terms of prevention, it is suggested that staff should be rotated regularly between units so as the same staff are not constantly exposed to the same risks. Constant and repetitive exposure to the same risks increases the likelihood of injury and further episodes (Chaffin & Anderson, 1984; Åstrand, & Rodahl, 1986).

Attitude

If there is a negative attitude among any nursing administration this may inhibit the benefits of education in lifting and perhaps it is the prevailing attitude which should be addressed primarily. A major component of the education, it is suggested, should be to change the attitude among nurses regarding encouraging patients to move themselves. Additionally, nurses could be taught that it is acceptable not to lift if they

consider the circumstances to be unsuitable. This may be a mammoth task in that it requires the whole system to become more sensitive to the issue of prevention before cure.

Ancillary staff

Another way of reducing the risks which nurses are exposed to which may also reduce costs is to create a pool of ancillary staff specially selected and trained to lift. They could be employed only to assist with patient lifting. This would perhaps reduce the likelihood of highly qualified nurses participating in dangerous lifting, getting injured and having to leave work. Nurses are paid on the basis of their academic qualifications and training not their physical abilities.

Reporting of injuries to management

Nurses should be more strongly encouraged to document their injuries fully in their own self-interests. Documenting incidents provides evidence as to the true incidence and prevalence of work related injuries for the purposes of both research and compensation (Swaffield, 1985).

Shortcomings of the study

Access to subjects

Gaining access to subjects for this study was a problem, not because there was an inadequate number of back injured nurses in the community but because it was difficult to find subjects without violating confidentiality. It was not possible to make a direct approach to subjects who had filed incident reports because these were kept in nurses' personal files which were not available to the researcher. Although permission had been obtained to use nurses within the hospital board the only way to access them was to post invitations on notice boards within the hospitals. This meant that the onus was upon the nurses themselves to respond. People who are in pain may not feel inclined to respond to a situation which will require them to recall the events surrounding their injury and remember their pain. Pain is a negative experience which most people would probably rather forget. The small sample size, while by no means representative of the incidence is therefore not surprising.

Additionally, back injured nurses may not have been at the workplace. They may have been at home resting, in hospital receiving treatment, in another job or retraining at an educational institution. Furthermore, some injured nurses may have been afraid of mentioning their back injury for fear of losing their jobs. Nurses are required to be completely medically fit to practice and some may have thought that by responding they would be noticed and thereby put their jobs at risk. Attempts were made to make it clear that the study was independent, voluntary and confidential in the hope that potential subjects would not feel threatened by participating.

Other ways of accessing subjects were considered but rejected. The researcher could have approached nurses in person within specific hospitals inviting those who had had a back injury to participate in the study. Obtaining permission to do this as an independent researcher would have been difficult and in retrospect unlikely to be granted. Hospitals are generally busy and, as was noted in the study, short staffed. Furthermore, patients' needs cannot be put off to suit others. This method of subject recruitment was justifiably rejected.

Using the Accident Compensation Corporation was considered as a viable means by which to recruit subjects, however this option was also rejected on the grounds of biasing the sample toward only those who had formally reported the incident. Within the literature it is estimated that a high proportion of back injuries go unreported so this method of procuring subjects would probably have been non-representative anyway.

No male subjects were included in the study as none responded to the invitation. Had the sample been larger there may have been males in the study. As nursing is predominantly a female occupation, the study was perhaps more representative without male subjects. Never-the-less according to the literature, males experience back pain in nursing too and are by no means excluded from injury within the profession.

Small sample size

As there were only 15 subjects and some missing data among the records, few statistically significant results were obtained. In retrospect, and due to the qualitative nature of the study, having only 15 subjects was more manageable in terms of reporting and discussing comments from the subjects.

Another problem with such a small sample size is that it may be non-representative with respect to unit, area or type of nursing. Indeed in this study type of nursing was limited. However in defence, back injury occurrence is generally limited to certain areas, namely, geriatric and long-term care. The current study demonstrated that injuries occur more frequently in these areas.

Recall

Most injuries were not recent (i.e. within the last 2 months prior to the interview) although back pain in many cases was ongoing. Many of the questions required subjects to recall feelings and thoughts at the time of the injury and immediately following it. While few subjects appeared to have difficulty with recall, one subject declined to rate her patients' pain because she couldn't recall accurately and preferred not to guess. Her injury had occurred 18 months earlier and she commented upon her own volition that had she been asked earlier, i.e two to three months after the injury, she would have been able to complete it. Another had been in an accident since her back injury which affected her memory and two subjects first indicated their level of pain and added words to the effect that "at the time I thought it was '10'" This implied that time had affected the vividness of their recall. It should be noted that pain is not something we are well equipped to remember anyway (Fordyce, 1988). Interviewing back injured nurses immediately after the event would have been the ideal way to ensure accuracy of recall. Obviously this is not possible pragmatically or ethically.

Assessment of Pain

According to Fordyce (1988) pain is a different experience for everyone therefore comparing pain between people is not valid. Due to the inherent problems with the assessment of pain in general, it was decided to obtain a subjective measure of pain rather than an objective assessment. Two approaches to the subjective magnitude of pain were made. One approach sought to grade the level of pain experienced by the individual at the time of the actual injury or as near as possible to that time. The second approach was to obtain some descriptive indication of the subject's pain, i.e. whether it was intermittent, severe, spasmodic or induced or exacerbated by certain activities.

Only the word "pain" was used with respect to this study as it was assumed that subjects, who tended to use the term frequently in their work, would operate under a similar understanding of the word pain. The scale used was a simple Likert 7-point scale from "no pain" to "severe" pain. Subjects found no difficulty in indicating their level of pain nor the level they perceived their patients to be in at the time. One subject, however did decline to complete the scale claiming that she could not recall honestly.

The comparison between the experience of pain of the nurse on the one hand and the observed or believed level of pain of their patient on the other, poses methodological problems. These are two different concepts of pain (i.e. a personal experience of pain compared to an observed level of pain) ascribed to the one assessment tool. While they are categorically different they are measured by the same person using the same scale and as such are considered adequate in terms of identifying what the nurse thought or felt at the time and to what extent this may have affected taking time off

work.

Another problem was to expect a nurse to target one patient given that nurses, typically (with the exception perhaps of Intensive Care Unit or "specialing") are responsible for the care of a number of patients at any one time. In general nurses had little difficulty as they were able to think of the most salient patient quite quickly which perhaps may have been the patient who was in the most pain.

Further research

As a result of this research a number of related studies are indicated. This study did not investigate the role of stress amongst nurses and back injuries. Stress has been discussed by a number of authors as playing a major role in the general health of nurses but apparently not specifically to back injuries.

As indicated in the results and discussion, a number of subjects considered the treatment they received to be inadequate. It could well be a worthwhile exercise to investigate the adequacy of treatment which nurses receive for back injuries.

A few studies have been conducted comparing the incidence and prevalence of back injuries between nursing and other occupations. Nothing was found which explored the attitudes, and treatment sought for back injuries in other occupations compared to nursing. In light of the present study this may be an interesting comparison.

As the small sample size and the narrow geographical area suggest, this study is not widely representative. A larger and wider study may show some useful similarities and differences.

Finally, in the interests of individuality, personality type and treatment sought for back injury could reveal some interesting patterns amongst nurses.

Conclusions

Generally, the study supported the three hypothesis, although most of the support was provided from the subjects' comments at the interview rather than statistical evidence. Many of the comments from nurses in the study support the view that a sense of responsibility to both colleagues and patients affects the delay between the injury and taking time off work. These findings were not unexpected.

With respect to self-diagnosis and self-treatment, results were not surprising. Nurses generally did not self-diagnose, although one quarter reported having made a decision to avoid lifting where possible immediately after their injury and until they had sought treatment. Most nurses self-treated at some time following their injury which is what would be expected of medical personnel

Nurses in the study overall expressed discontent with the risks of the job and apparent neglect by management of the problems associated with lifting. They expressed dissatisfaction with respect to staffing levels. In particular some felt that their unit had been short staffed to begin with, a situation which had contributed to their injury because of the need to lift a patient alone when they should have had the help of another staff member.

There was obvious dissatisfaction amongst the nurses with the amount and irregularity of education in lifting procedures. Additionally, some voiced their concern about the absence of some type of rehabilitative period where injured nurses can return to work on light duties until they are completely fit. A return to employment and the re-establishment of social contacts is an important part of rehabilitation following illness or injury. In some cases nurses cannot return at all to nursing because they cannot be

cleared as medically fit. Consequently, their academic nursing skills are wasted because they cannot be classified as fit due to physical disabilities sustained from the workplace.

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Appendix 1

The Interview

Introduction

"Hello, I'm Julie Hale.
I am a post-graduate industrial psychology student and also an Enrolled Nurse.

I am doing some research on back injuries amongst nurses. I've chosen to investigate this area because it is well documented that there is a high number of back injuries amongst nurses leading to time taken off work.

It is the aim of this study to investigate when and where these injuries occur, what actions nurses take to treat these injuries and what factors are involved in taking time off work for these injuries.

As I understand it you have a back injury or back pain. Is that correct? Would you mind answering a few questions about your injury and how it happened?

The investigation will take the form of a person-to-person interview of about twenty minutes, during which you will be invited to answer a number of questions regarding your injury and/or backpain.

I would like to point out that any information you give will be confidential and neither your name nor any identifiable information will appear on this form or any publication subsequent to this research.

It is not the intention of this research to question anything regarding your injury nor to judge your pain or your actions. The intention is only to establish what did happen and why you think it may have happened that way.

Consent form

To ensure accuracy of this interview, I'd like to request that you answer the questions as honestly and fully as you can. Please feel free at the end of the interview to discuss any of the questions or add any details you feel have been overlooked.

Appendix 2

UNIVERSITY OF CANTERBURY DEPARTMENT OF PSYCHOLOGY

CONSENT FORM

Brief description of the project:

Topic 'Back injuries amongst nursing staff' It is the aim of this study to investigate when and where these injuries occur, what actions nurses take to treat these injuries and what factors are involved in taking time off work for these injuries.

This investigation will take the form of a person-to-person interview during which you will be invited to answer a number of questions regarding your injury and/or backpain.

It is not the intention of this research to question anything regarding your injury nor to judge your pain or your actions. The intention is only to establish what did happen and why you think it may have happened that way.

Risks associated with participation:

No risks of participation are anticipated.

Time required:

Approximately 20-30 minutes of your time.

Name of researcher/supervisor:

Researcher: Julie Hale
Supervisor: Professor Dean Owen

"I agree to participate in the project described above, on the understanding that if at any time I wish to withdraw from the experiment I may, without prejudice, do so. I understand that any information I give will be confidential and neither my name nor any identifiable information will appear in any publication subsequent to this research."

Name_____

Signature_____ Date_____

Appendix 3

Questionnaire

Job Details

1. What area were you working in when you injured your back?

2. What is/was your Job Title?

3. On this scale rate the amount of pain you think your most ill patient was in during the last days that you were nursing them?

I I I I I I I
1. 2. 3. 4. 5. 6. 7.
no pain moderate severe

4. How long had you/have you worked in that area?

5. What shift were you on when your injury occurred?

6. How did you injure your back?

7. What assistance did you have?

8. How long ago did this happen?

9. When did you first become aware of back pain?

10. What decisions, yourself, did you make about your condition?

11. On this scale rate the amount of pain you were in during the last day or days that you were nursing?

I I I I I I I
1. 2. 3. 4. 5. 6. 7.
no pain moderate severe

12. How would you describe your pain/discomfort?

13. At what times does this pain occur?

Appendix 3 (Contd.)

Questionnnaire

Treatment

14. a) With respect to your injury/pain what action, if any, did you take and in what sequence?
If 'no action' taken go to 33

14 b) Did you complete an incident form?

15. How long was it after your injury/onset of pain that you sought advice?

16. How long was it after your injury/onset of pain that you sought treatment?

17. Did you take time off duty to receive this attention?

18. What was the main reason which enabled you to take time off duty *or* What was the main reason for *not* taking time off duty?

19. If you saw a specific person was this person within the hospital in which you worked?

20. Were you working alongside this person at the time you consulted them?

21. What position did this person have?

22. What sort of examination or attention did you receive?

23. Do you think this was adequate?

24. *(If 'no')* In what way was it inadequate?

25. What sort of treatment was recommended or prescribed?

26. Do you think this was adequate?

27. *(If 'no')* In what way was it inadequate?

28. How well were you able to follow this advice/treatment?

29. Why do you think this was?

Appendix 3 (contd.)

Questionnaire

30. How much time did you take off work?

31. Do you think this was
Δ enough Δ not enough Δ too much

32. If you became injured again, would you act differently?

33. What action do you think you would take?

34. *From Question 14. ; If no action taken,* what action, would you have preferred to take?

35. Why, in particular, did you not take this action?

36. Were you working full-time or part-time when you injured your back?

Are there any other comments you'd like to add regarding your injury, how it happened, what you did about it etc.

..and, finally, I'd like to ask you to complete some biographical details.

Appendix 4

Questionnaire

Biographical data

Please, either, tick the appropriate box or write in the appropriate number/amount/figures in the appropriate space.

37. Gender: Female Δ Male Δ

38. Age: _____yrs

39. Height: ____ft ____ins *or* ____cms

40. Weight: _____stone_____lbs *or* ____kg

41. Body type: Δ small Δ medium Δ large

42. Fitness:

What, if any, exercise other than work, do you do?
(Please indicate how often per week you would do this exercise)

Δ walking	___times per week
Δ swimming	___times per week
Δ cycling	___times per week
Δ running	___times per week
Δ	___times per week

43. Where would you rate yourself on this scale?

I	I	I	I	I	I	I
1.	2.	3.	4.	5.	6.	7.

Very unfit Medium fitness Very fit

44 Do you do any stretching exercises before you begin your duty?
Δ Never Δ Sometimes Δ Frequently Δ Always

45. How many cigarettes do you smoke per day?_____

Thank you for your co-operation

Appendix 5

Debriefing

You may remember that last year I was investigating back injuries amongst nurses and I interviewed you and asked you some general questions about your back injury and the treatment you received etc. I'd like to thank you for participating and take this opportunity to inform you more precisely of the objectives of the study.

So as not to bias your responses to the questions in any way, I deliberately did not tell you my specific intentions.

Firstly, I wanted to see if the perceived pain level of the patient and the perceived level of the nurse would affect whether a nurse took time off work with a back injury or not. To do this I asked you to rate your patients' pain on a scale and later to rate your own pain on an identical scale.

Secondly, I wanted to investigate the extent to which nurses self-diagnose, self-treat and seek and receive on-the-job advice and diagnosis from colleagues. To do this I asked you what actions you took, who you sought advice from and in what order.

Thirdly, I wanted to see if these two factors together affected the delay between the initial injury and cessation of work together with the total amount of time taken off work.

Given these three hypotheses, do you have any other comments to add?

Appendix 6

Comments from Subjects

Intended action on succeeding occasions

Subjects were asked what they would do if they became injured again. Some of the responses are listed below.

"...stop immediately and go home".

"..seek more advice ...[particularly regarding] *exercises to strengthen my back".*

"...leave work immediately and get help with the children".

"... take more time off work - now I'm more inclined to leave work if I'm injured but you stay on for other staff."

"... seek treatment immediately ...take time off [for this treatment]".

"...would go and see the chiropractor; wouldn't go back to that form of nursing".

"... insist on proper examination and treatment...".

"...had my back seen to straight away".

"...act differently to advice given".

"...seek non-conventional medicine [e.g.] osteopath ... holistic approach".

".. take more time off work...leave work immediately".

Comments regarding not taking time off work

Subjects were asked why they thought they had not taken time off duty when they sustained their injury and some of their comments are listed below.

Appendix 6 (Contd.)

"Wouldn't do [it - take time off work] *to fellow nurses or patients to just walk off".*

"Christmas day was a factor [in not going off duty]*...we were short staffed and allowed to go off duty early (because it was Christmas Day). Intellectually handicapped patients are very needy...Because I was allowed off early I didn't think it was fair or necessary to go off duty early with a back injury."*

"...had to continue because there was nobody else to take over".

"...it was in the middle of the night and there was no-one else to work...".

"... thought it would go away"

"...no staff available"

"... didn't think it was bad enough"

"....not very sore - didn't know what it was"

Comments regarding adequacy of time off work

Subjects were asked if they thought they had taken enough time off work. Some of the comments from those who didn't think they had taken enough time off work are listed below.

"... not enough ...I had two weeks off, then three months and then I was dismissed...".

"...not enough because I still had back pain [which created a situation of] *acute back pain* [in addition to] *chronic* [because] *it takes time and you still do things at home... took as much time off as I could but it was restricted because of staffing".*

Appendix 6 (Contd.)

"At the time it was [enough time off] *because the pain went away but at different times it came back again".*

"I was keen to get back to work".

Comments regarding an early return to work

A number of subjects returned to work earlier than they thought they should have, in retrospect. Their comments included:

"I went back to work after two days because I was aware that everyone else works twice as hard if someone is off duty... if you're off work any length of time, other staff have to work harder".

"...I went back to work because I felt I'd been off work long enough - too long really ...thought I should go back".

Comments regarding equipment and lifting

"...not much equipment - just nurses..."

"Some long term staff won't use equipment. - any changes, they find them a hassle - its quicker to do it the old way".

"A 'Dextra-lift' for nurses was lent to a patient to take home..."

"...ward not designed for 'heavy patients'..."

"...lack of lifting equipment in all areas".

[Upon a recent visit to the geriatric unit] *"I noticed that there was a new hoist which staff had purchased themselves!".*

"Hydraulic lifts and hoists should be available ... they spend money on computers but not lifting devices".

Comments regarding education in lifting

"Physios train staff [in lifting]*whenever it's requested".*

"Nurses are not retaught lifting - once you've been

Appendix 6 (Contd.)

taught in initial training it's assumed you'll never forget".

"...do teach lifting to student nurses, but don't update very often"

"Sometimes physios will do a training session and you might hear about it..."""

Comments regarding lifting

"There are times when other staff are not available".

"At certain times everyone feels they can't ask for help (with lifting)....'don't like to ask' type of attitude"

"research done on stress... found that having to ask others for help 'causes stress'"

"There are orderlies available to assist but sometimes they're not available because they have other jobs too"..

"...not sufficient attention paid to the risks nurses take with their backs. Young girls [nurses] *do too much lifting endangering their backs...".*

"...shoulder lift is good...but many staff don't know how to do it".

"I've always thought it very strange where there was predominantly elderly patients they don't provide for staff adequately".

"...not sufficient to say its a 'nurses problem"'

"You can't always lift 100% correctly ...old-fashioned beds, can't adjust them..."

"...heavy rehabilitation ward with no equipment

"...conflict due to rehabilitative nature of the ward..and

Appendix 6 (Contd.)

attempts to rehabilitate to normal living".

General comments

At the end of the questionnaire, subjects were invited to respond with any other general comments regarding their injury, their actions and their treatment. Responses included:

"The reason why I'm not working now is partly due to politics and no full medical clearance ...".

"...very little support [and the] *support that counted wasn't there".*

"You can't do much about back injuries...could have got help but...it was a busy morning and iI was in a hurry...everyone was very busy and I thought the patient could help but they didn't".

"You go to work knowing that you could possibly injure yourself...if someone gets injured - you just work short" .

"If someone can't lift - it's better not to have them - a nurse with a bad back shouldn't be working there. Nurses who've had sore backs have moved on"

"Selection should be a criteria perhaps..."

One subject was told:*"If I can't become fit enough to work in that area I'll have to leave nursing.*

There's nobody [to attend specifically to nurses medical problems] *at* [this] *hospital for nurses - since about eighteen months ago...the system now doesn't provide this service"* [Health Clinic for Nurses].

"...awful lot of hypocrisy; not the support you would

Appendix 6 (Contd.)

expect...sympathy, if you could call it that, was from colleagues, not from hierarchy..."